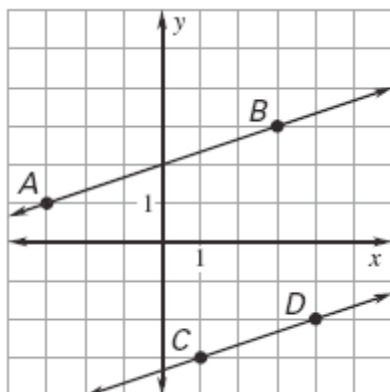


# Geometry Date \_\_\_\_\_ 3.6 & 7 Assignment: Parallel & Perpendicular Lines in the coordinate Plane (pp 172-174)

1. What is your name?

Find the slope of each line. Are the lines parallel?

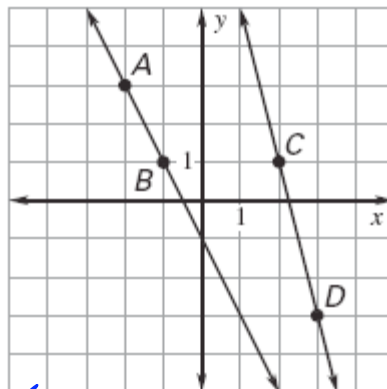
2.



$$\overleftrightarrow{AB} \rightarrow \frac{1}{3} \rightarrow \overleftrightarrow{CD}$$

$$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$$

3.

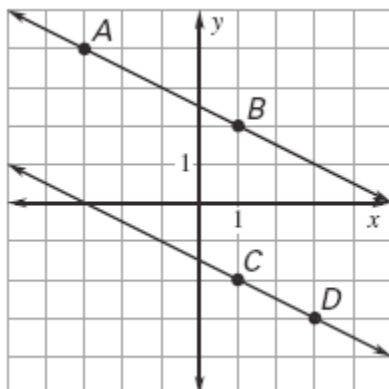


$$\overleftrightarrow{AB} \rightarrow -2$$

$$\overleftrightarrow{CD} \rightarrow -4$$

Not parallel

4.



$$\overleftrightarrow{AB} = -\frac{1}{2}$$

$$\overleftrightarrow{CD} = -\frac{1}{2}$$

$$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$$



**Geometry**    **Date**\_\_\_\_\_    **3.6 & 7 Assignment:**  
**Parallel & Perpendicular Lines in the coordinate Plane**  
**(pp 172–174)**

**Write an equation of the line.**

5. Slope =  $\frac{2}{5}$

y-intercept = -2

$$y = \frac{2}{5}x - 2$$

6. Parallel to  $y = 4x - 4$

y-intercept =  $-\frac{3}{5}$

$$y = 4x - \frac{3}{5}$$

7. Parallel to  $y = 8$   
y-intercept = 0

$$y = 0$$

**Write an equation of the line that passes through the given point P and has the given slope.**

8. P(0, 2); slope = 5

$$y = 5x + 2$$

9. Parallel to  $y = 4x - 4$ ; y-intercept =  $-\frac{3}{5}$

$$y = 4x - \frac{3}{5}$$

10. P(-3, -3); slope = -3

**Geometry    Date\_\_\_\_\_    3.6 & 7 Assignment:**  
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$$y = -3x - 12$$

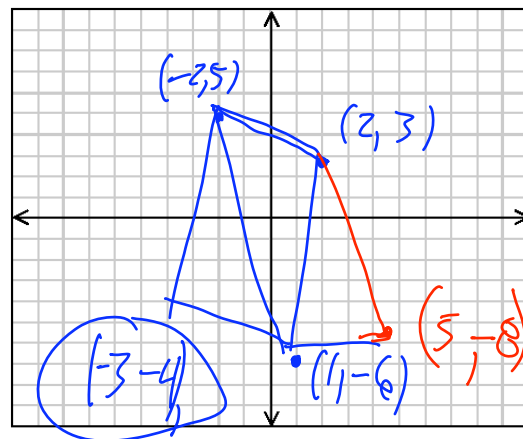
# Geometry Date\_\_\_\_\_ 3.6 & 7 Assignment: Parallel & Perpendicular Lines in the coordinate Plane (pp 172-174)

A parallelogram is a four-sided figure whose opposite sides are parallel. Given  $A(2, 3)$ ,  $B(1, -6)$ , and  $C(-2, 5)$ .

11. Plot and label the three points.

12. Determine the coordinates of point D so that the points are the vertices of a parallelogram. Hint: There is more than one location.

$(-3, -4)$  &  $(5, -8)$

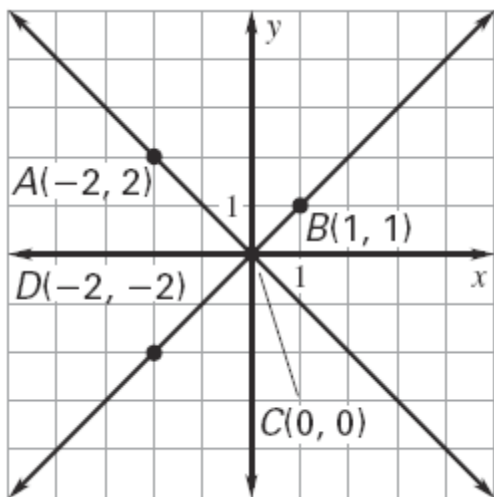


13. If one pair of opposite sides of a parallelogram have positive slopes, will the other pair of sides have negative slopes? Explain.

yes if 2 sides go up, the others must go down

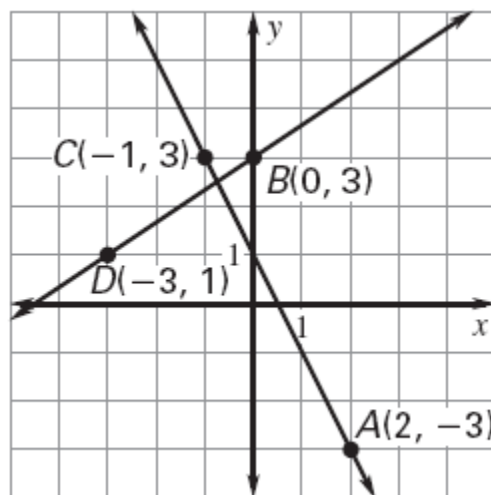
Find the slope of  $\overline{AC}$  &  $\overline{BD}$ . Decide whether  $\overline{AC} \perp \overline{BD}$ .

14.



$\overline{AC} \rightarrow -1$   
 $\overline{BD} \rightarrow 1$   
 $\overline{AC} \perp \overline{BD}$

15.

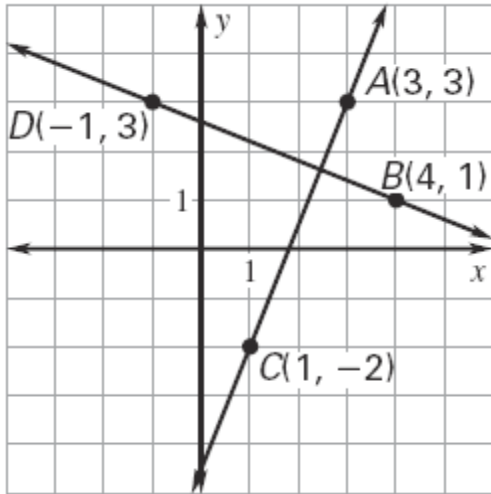


$\overline{AC} \rightarrow -2$   
 $\overline{BD} \rightarrow 2/3$  No.

**Geometry    Date\_\_\_\_\_    3.6 & 7 Assignment:**  
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Geometry Date \_\_\_\_\_ 3.6 & 7 Assignment:  
 Parallel & Perpendicular Lines in the coordinate Plane  
 (pp 172–174)

16. Find the slope of  $\overline{AC}$  &  $\overline{BD}$ . Decide whether  $\overline{AC} \perp \overline{BD}$ .



$$\overleftrightarrow{AC} \rightarrow \frac{5}{2}$$

$$\overleftrightarrow{BD} \rightarrow -\frac{2}{5}$$

Determine if the intersection of  $\overline{AB}$  &  $\overline{CD}$  forms a right angle. Show some work/Explain your reasoning.

17. A(-7, 0), B(-2, -1), C(-3, 6), & D(-4, -3).

$$\overleftrightarrow{AB} \rightarrow -\frac{1}{5}$$

$$\overleftrightarrow{CD} \rightarrow 9$$

No

18. A(5, 8), B(1, 6), C(1, -3), & D(-3, 5)

$$\overleftrightarrow{AB} \rightarrow \frac{1}{2}$$

$$\overleftrightarrow{CD} \rightarrow -2 \quad \text{yes}$$

**Geometry**    **Date** \_\_\_\_\_    **3.6 & 7 Assignment:**  
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19.  $(-4, 4)$ ,  $B(4, 3)$ ,  $C(-2, -4)$ , &  $D(-1, 4)$

$$\overrightarrow{AB} \rightarrow -\frac{1}{8}$$
$$\overrightarrow{CD} \rightarrow 8 \quad \text{yay.}$$

20.  $A(1, 2)$ ,  $B(-2, -6)$ ,  $C(-1, 5)$ , &  $D(5, 2)$

$$\overrightarrow{AB} \rightarrow \frac{8}{3}$$
$$\overrightarrow{CD} \rightarrow -\frac{1}{2} \quad \text{No.}$$

**Line j is perpendicular to the line with the given equation and line j passes through P. Write an equation of line j.**

21.  $y = \frac{1}{6}x + 5$ ,  $P(-3, 1)$

$$y = -6x - 17$$

22.  $y = 0.1x + 7$ ,  $P(1, 2)$

$$y = -10x + 12$$

23.  $y = -\frac{5}{2}x + 1$ ,  $P(-5, 6)$

$$y = \frac{7}{5}x + 8$$

24.  $y = \frac{2}{3}x + 4$ ;  $P(6, -2)$

$$y = -\frac{3}{2}x - 11$$

# Geometry Date\_\_\_\_\_ 3.6 & 7 Assignment: Parallel & Perpendicular Lines in the coordinate Plane (pp 172-174)

Decide whether the lines with the given equations are parallel, perpendicular, or neither.

25.  $2x - 4y = 3$

$4x - 8y = 7$

Parallel

26.  $2x - 5y = 8$

$5x - 2y = 2$

Neither

27.  $y = \frac{5}{6}x + 8$   
 $y = -\frac{6}{5}x - 4$

⊥

28.  $x - 2y = 12$   
 $3x - 6y = 10$

||

## Review.

Use the diagram to complete the statement.

(Chapter 2 Section 6)

29. If  $m\angle 5 = 38^\circ$ , then find  $m\angle 8$ .

142°

30. If  $m\angle 3 = 36^\circ$ , then find  $m\angle 4$ .

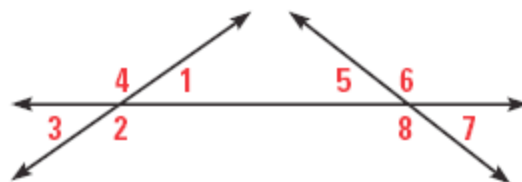
144°

31. If  $\angle 8 \cong \angle 4$  &  $m\angle 2 = 145^\circ$ , find  $m\angle 7$ .

35°

32. If  $m\angle 1 = 38^\circ$  &  $\angle 3 \cong \angle 5$ , find  $m\angle 6$ .

142°

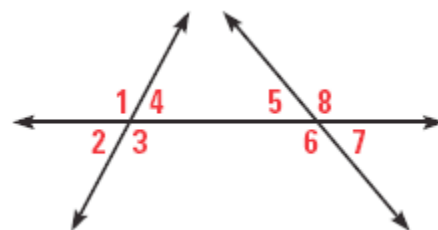


Use the diagram to complete the statement. (Chapter 3

Section 1)

33. What makes a pair of same-side interior angles with  $\angle 3$ ?

∠6





Geometry     Date \_\_\_\_\_     3.6 & 7 Assignment:  
Parallel & Perpendicular Lines in the coordinate Plane  
(pp 172–174)

34. What makes a pair of an alternate exterior angle with  $\angle 1$ ?

$\angle 7$

35. What makes a pair of alternate interior angles with  $\angle 4$ ?

$\angle 6$

36. What makes a pair of corresponding angles with  $\angle 1$ ?

$\angle 5$

37. Describe the 3 types of proofs that you have learned so far? (Chapter 3 Section 2)

2 column, paragraph & flow.

